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Reports results of an evaluation of college instruction at the Pennsylvania State University through an analysis of teaching methods in 50 undergraduate nonlaboratory classes. The following instruments were used: a student "opinionnaire," a teacher-observer rating form, and the interview form.

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# AN ANALYSIS OF TEACHING METHODS IN FIFTY UNDERGRADUATE, NON LABORATORY CLASSES AT THE PENNSYLVANIA STATE UNIVERSITY

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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## THE STUDY AND A SUMMARY OF THE FINDINGS

Complaints about college teaching methods are not new. College students, professors and administrators of former times were no less concerned about college instruction than they are today. References to these complaints of former times appear in various sources, for example, the books, Academic Procession,[1] and The Art of Teaching[2]. Recent criticisms of college teaching methods have also appeared in print. Among other publications journals such as Education,[3] American Association of University Professors Bulletin,[4] and Journal of High Education[5] carry such articles.

The present study was undertaken to enlarge the picture of the kind of instruction that really takes place in college classes and to note the positive as well as negative aspects concerning college teaching methods. The purpose of this study is to obtain an evaluation of college instruction at The Pennsylvania State University through an analysis of teaching methods in fifty undergraduate, non-laboratory classes.

## SUMMARY OF THE PROCEDURE

The procedures used to carry out this study involved obtaining permission to make the study, selecting the sample, formulating instruments to gather reasonably valid data, and administering those instruments.

Permission to solicit cooperation from instructors representing all but one of the colleges of The Pennsylvania State University was obtained through contacting deans of assistant deans, and department heads of these colleges. The latter submitted names of prospective volunteers to take part in the study. These instructors were then approached by the writer to ask for their cooperation, and thus 50 volunteers were scheduled to participate.

Instructors from the College of Chemistry and Physics were not included because their courses and/or class enrollments did not fit the specifications of the study. These specifications stated that classes to be observed were to be

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1. Earnest, Ernest, Academic Procession, The Bobbs-Merrill Co., Inc., New York (1953) p. 23
2. Highet, Gilbert, The Art of Teaching, Alfred A. Knopf, New York (1952) p. 81
3. Bolling, R. W., "You Bore Me Prof," Education, Vol. 73:351-353 (February 1953)
4. Wilson, Wilard, "Physician, Heal Thyself," American Association of University Professors Bulletin, Vol. 38:287-295 (June 1952)
5. Schueller, H., "Madness of Method in Higher Education," Journal of Higher Education, Vol. 22:80-96 (February 1951)



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undergraduate classes having no scheduled laboratory work in connection with them. The class enrollment was to be no less than ten students, nor more than 40. The time indicated for class visitations was between February 15 and May 21, 1954.

To obtain reasonably valid data for analyzing the teaching procedures in certain classes, three means were utilized: the investigator's personal observations of the teaching procedures, student opinions, and personal interviews with the cooperating instructors.

Before any instruments were designed to gather data, reports of newer educational theories and educational research concerning teaching methods were studied. Devices such as questionnaires, student rating forms, check lists, anecdotal record-sheets, and interview forms used in studies about teaching effectiveness were investigated. The following instruments were then constructed: a student "opinionnaire," a teacher-observer rating form, and the interview form.

The "opinionnaire" consisted of ten items with four categories each for rating the instructor's teaching methods, and a set of directions for using the form. The following items appear on the "opinionnaire" in this order. A. Course Objective, B. Course Activities, C. Student-Instructor Planning, D. Expression, E. Speech Mechanics, F. Presentation of Subject Matter, G. Knowledge of Subject, H. Effective Guidance for Learning, I. Student-Instructor Relationships, and J. Evaluation of Achievement. The teacher-observer rating form was patterned after the "opinionnaire." The interview form consisted of open-end questions designed to obtain the instructor's opinions regarding teaching methods. These instruments were submitted to the writer's graduate committee for criticism, after which they were further refined, tested, and improved. This was done to establish the validity of the instruments and to increase their reliability.

In administering the instruments, the teacher-observer rating form was used first. The writer made three class visits to each of the cooperating instructors, a total of 150 visits. A complete anecdotal record was made during each visit. Later in the day this record was transferred to the teacher-observer rating form, which had been designed for that purpose. During the last ten minutes of each third visit, the student "opinionnaire" was administered. One thousand, one hundred forty-two "opinionnaires" were used by that many students in this study.

Before the "opinionnaires" were administered to a particular class, the instructor left the room. At that time he was given a set of questions proposed for discussion during the interview, which was to follow in a day or more. On the scheduled hour, the observer held an interview with each cooperating instructor. The purpose was to obtain the instructor's opinions concerning college teaching methods, and to learn about what factors he believed influenced his teaching procedures. In all, 50 interviews were held.

## SUMMARY OF THE FINDINGS

According to the findings of this study as indicated by the opinions of the observer, students, and instructors, Course and Class Objectives were rated as being reasonably clear; these items were ranked high in importance by the

instructors. Course activities, for the most part, were in line with the course objectives.

The instructors were rated less favorably on Student-Instructor Planning, than on Course Objectives and Course Activities. The instructor's responses to interview questions concerning course objectives showed that only 48 per cent included some student participation in the formal planning of course objectives and activities. However these instructors mentioned observing students' needs and interests and following leads from students' discussions.

With three exceptions cooperating instructors rated high in Student-Instructor Relationships according to all opinions involved. Effective Guidance for Learning was another strong point with the majority of instructors.

From the evidence, most of the instructors were well versed in subject matter. Their presentations of the subject consisted chiefly of informal lectures and discussions with plentiful use of the blackboard, and a varying amount of other audio-visual aids. Plans for field trips were often included.

According to the students, more instructors rated lower on Evaluation of Achievement than on any other items. From further analysis of the data concerning that item, and from the number of students who inquired of the writer the meaning of it, it appeared that some students did not understand Evaluation as defined on the "opinionnaire." The observer made no rating on that item because in the majority of classes visited, there was little opportunity to notice how a student's achievement was evaluated.

For the most part, the instructors associated Evaluation of Achievement with grading. A number evidenced dissatisfaction with grading as it is now accomplished. Sixty-four per cent of the instructors did not encourage student participation in evaluation, although a number of instructors indicated that they allowed students in graduate classes to help with student evaluation. Only one of the 50 instructors used tests alone as a basis for grading.

With few exceptions all the instructors received a good rating on Expression and Speech Mechanics. The observer's and students' opinions on these two items were remarkably similar.

The responses of instructors to the interview question concerning evaluation of their own teaching methods showed that they believed this was an important consideration, and one to which more time should be devoted. Most of them believed that they performed self-evaluation through analyzing their students' reactions to the classroom procedures.

Concerning the importance of certain factors influencing their teaching methods, the instructors indicated that the greatest single influence was their former teachers. These instructors believed that they adopted from their former teachers something of what they considered techniques favorable to learning, and rejected methods they disliked.

Thirteen of the 25 instructors who had had professional education courses

in teaching methods believed that all these courses were helpful. Nine remarked that one or two of the courses were helpful, and three said that none were of value to them. The chief complaint from the majority of the instructors was that there is too much repetition in education courses.

In regard to informal influencing factors, many instructors believed it was hard to pinpoint that which influenced their teaching methods. Those factors given precedence were: informal contact with fellow instructors, business and professional conferences; reading technical and professional journals and magazines; and observing their own children's growth and development. In the opinion of the majority of the instructors, reading books, listening to the radio, and watching television, movies and plays were believed to have little influence on their teaching methods.

Briefly stated, the quality of teaching, as observed and analyzed in this study, was such as to stimulate and promote learning. According to the opinions of the observer and students, the teaching methods of 96 per cent of the instructors were thus classified. The majority of the instructors believed in having course objectives, making them clear to the students and developing class activities in line with the objectives. Less emphasis was placed on student-instructor planning and student participation in evaluation. Instructors' expression, speech mechanics, knowledge of subject, and presentation of subject matter received favorable ratings in most cases. Effective guidance for learning was evident in all but a few classes. Student-instructor relationships appeared informal and friendly. Enriching professional education courses in teaching methods was emphasized, and confidence in the value of such courses was indicated by a number of the instructors. Former teachers rated high as influencing factors on instructors' present methods of teaching. Also informal contacts were believed to have some influence.

The findings show that the majority of the instructors who participated in this study at The Pennsylvania State University met the criteria for effective teaching methods.